United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
500 NE Multnomah Street, Suite 356
Portland, Oregon 97232-2036

IN REPLY REFER TO:

April 16, 2002

ER02/0165

Mr. Robert Beraud
Bonneville Power Administration
BPA Communications Office KC-7
P.O. Box 12999
Portland, Oregon 97212

Subject: **COMMENTS** – Review of Draft Environmental Impact Statement for the Wallula Power Project and the Wallula-McNary Transmission Line Project, DOE/EIS-0330, Walla Walla County, Washington

Dear Mr. Beraud:

The Department of the Interior (Department) has reviewed the subject draft environmental impact statement for the proposed Wallula Power Project and the Wallula-McNary Transmission Line Project, DOE/EIS-0330, Walla Walla County, Washington. The following comments reflect considerable concern about environmental impacts related to the construction and operation of the proposed project, especially for the project's potential to adversely affect the operation and management of the U.S. Fish and Wildlife Service's (Service) McNary National Wildlife Refuge (NWR). The Department requests that the Bonneville Power Administration (BPA) address these concerns, including continued consultation and coordination with the Service, during the development of the final environmental impact statement for these proposed projects.

GENERAL COMMENTS

In general, the draft environmental statement adequately describes the habitat and fish and resources found in the project area. However, in describing potential impacts to wildlife resources, the draft document fails to explain the significance of the impacts. The document reports the litany of species which could be impacted by construction and operation of the proposed power plant and associated transmission line, then reports the types of mitigation measures that would be used to offset impacts, and finally provides a very general assessment of the post-mitigation level of impact. Such an analysis does not assess the overall ramifications of the impact to the affected resources; what National Environmental Policy Act (NEPA) refers to as significant (40 CFR 1502.16 (a), (b) and 40 CFR 1508.27). The final environmental document should explain the biological basis for why the mitigation measures are expected to reduce the

25-1

level of impact, and the ramifications of the level of impact in the context of existing baseline conditions. 25-1 contd

It would be helpful if a section was included in the final environmental document to address potential impacts specific to the McNary NWR. As the refuge is public land set aside for specific fish and wildlife purposes, the final environmental statement should inform the public of possible alterations to the refuge. In addition, the connection between the McNary NWR and the Wallula Habitat Management Area could be clarified. 25-2

The Service has engaged in pre-development consultation with BPA and its consultants. We expect that formal consultation pursuant to section 7 of the Endangered Species Act and its implementing regulations at 50 CFR 402.14, will be initiated by BPA with the Service in the near future. Federal agencies are required to review their actions at the earliest possible time to determine whether any action may affect listed species or critical habitat. If such a determination is made, consultation with the Service is required. 25-3

The BPA should prepare a Biological Assessment (BA) to evaluate the potential effects of the project on listed and proposed species and critical habitat, and determine whether any such species or critical habitat are likely to be adversely affected by the action. Under the Act's implementing regulations at 50 CFR 402.08, the BPA may designate a non-federal representative to conduct informal consultation or prepare a biological assessment. If the BA is prepared by the designated non-federal representative, the BPA must furnish guidance and supervision, and must independently review and evaluate the scope and contents of the BA. The ultimate responsibility for compliance with section 7 remains with the BPA. 25-4

SPECIFIC COMMENTS

Page 2-1; Introduction: The potential environmental effects of the proposed Wallula electrical generating plant are described as nominal. Considering the potential impacts of significant ground disturbance within the 178-acre project site, four 175-foot tall exhaust stacks, a new switchyard covering 7 acres, 6 miles of natural gas pipeline, 33 miles of transmission lines to be constructed or modified adjacent to habitat areas used by thousands of migratory birds, 40 acres of disturbance for transmission towers, 11 miles of new access roads, and 70-80 new spur roads for access to the transmission line, nominal does not seem to be an accurate adjective. 25-5

Page 2-21; Transmission Line and Associated Facilities: It is unclear if treetops or entire trees would need to be removed during construction and maintenance where the proposed transmission line would cross the Walla Walla River. Removal of trees and shrubs should be avoided, if possible. 25-6

Page 2-19; Generation Plant: This section mentions two 100% capacity decant basins and a brine concentrator, but does not provide any description of these facilities. A full description of

Page 2-19; Generation Plant: This section mentions two 100% capacity decant basins and a brine concentrator, but does not provide any description of these facilities. A full description of these facilities, and an analysis of possible impacts related to the construction and operation of these facilities should be included in the final environmental statement. 25-7

Page 2-36; Alternative Alignment near McNary Substation: How do the alternative alignment alternatives relate to the proposed construction of the John Day - McNary Transmission Line? Will any of the proposed work for this project need to be reconfigured if the John Day - McNary line is built? This information should be explained in the final environmental statement. 25-8

Page 2-45; Table 2.4: It would be helpful to decision makers if the final environmental statement, in this section or elsewhere, included a brief discussion of the jurisdiction issues at McNary NWR. Granted, the table mentions that the U.S. Army Corps of Engineers (Corps) owns and the Service manages, but that does not convey an accurate picture to the public of agency management responsibilities. We suggest including the following excerpts from the Cooperative Agreement between the Department of the Army and the U.S. Department of the Interior, Fish and Wildlife Service, dated January 13, 2000, to help clarify the working relationship between the Corps and the Service.

> "This Cooperative Agreement shall be subject to the provisions and conditions of the General Plan and the following conditions:
>
> 4. That the use of the Premises for wildlife conservation, management and recreation shall be subject at all times to occupation and use by the Department [of the Army] for all purposes of the project. The District Engineer shall give 120 days notice to the Service prior to conducting any activities on the Premises covered by this Cooperative Agreement which may substantially affect the wildlife conservation, management or recreation programs. 25-9
>
> 8. The Department [of the Army] reserves unto itself the right to grant easements, leases and licenses for any purpose whatsoever. Any application for easements, leases or licenses received by the Service shall be referred with recommendations to the District Engineer for processing. Applications for easements, leases and licences received by the Department [of the Army] will be coordinated with the Service for its recommendations. The Department [of the Army] will give full consideration to any adverse effect that any proposed grant may have upon the wildlife conservation, management or recreation programs prior to the execution of any such easement, lease or license."

Has it been determined whether the Corps must issue a permit, a letter of concurrence, etc. to allow the project to occur on Corps-owned land? If so, the approval process should be discussed in relation to this table. 25-10

We understand that the McNary NWR lands were initially set aside by the Corps as mitigation for the McNary Dam. Is it permissible for the Corps to authorize additional easements on lands that have been already set aside as mitigation for a different project? It should be explained in the final environmental statement that the reason for protecting these lands was as mitigation for the dam, which still exists. Long-term impacts deserve long-term mitigation. Given that the dam still exists, and is, therefore, still being mitigated for, it seems inconsistent for the Corps to authorize actions that would remove those lands from protection, such as expanding a right-of-way easement. This type of action further fragments this area, ever decreasing its value as mitigation. It should be explained in the final environmental statement how the mitigation proposed for the Wallula Power Project and the Wallula-McNary Transmission Line Project would mitigate for not only the proposed project, but for the withdrawal of McNary Dam mitigation lands as well. 25-11

Page 3.2-12; Nonattainment Area Emission Offsets: Please provide a map depicting the distribution of the 1,300 acres of active farmland proposed for purchase or lease. While acquisition and conversion of this acreage to cultivated dryland grasses or dryland grasses and shrubs may help to offset particulate production from the proposed generation plant, it would provide minimal benefits for wildlife if the acreage is not contiguous. Thirteen hundred contiguous acres that are restored to native shrub-steppe vegetation would likely provide potential benefits to air quality and wildlife. 25-12

Page 3.3-18; Water Rights Options: Please provide an assessment of the possible impacts resulting from changing the current seasonal withdrawal water rights to ones that allow year-round withdrawals. 25-13

Page 3.4-10; Wetlands: The statement is made that the project at the site of the proposed generation plant is designed to avoid wetlands. This statement should be clarified in the final environmental statement to refer to "jurisdictional wetlands," because it appears that there would be direct impacts to non-jurisdictional wetlands. Also in the final statement, this section should clarify whether the Corps is involved in determining the jurisdictional status with respect to section 404 of the Clean Water Act. If so, the process involved in making those determinations should be explained. 25-14

Page 3.4-18; Significant Unavoidable Adverse Impacts: From reading this section, it is not clear where the 145 acres of riparian tree planting proposed for mitigation would be located, and who would manage the planted acreage to ensure it remains as wildlife habitat? We would recommend that any proposed riparian restoration should occur along the Walla Walla River, and be contiguous with existing woody riparian habitat. The Service has identified an area upstream and adjacent to current wildlife lands. Purchase and restoration of this property would help to offset potential bird losses due to collisions. 25-15

Page 3.6-6; Riparian: The Service can provide a more extensive list of birds that are known to breed and/or use riparian areas as stopover sites during spring and fall migrations. 25-16

Page 3.6-9; Impacts of the Proposed Action: Construction and use of the temporary access road would result in soil compaction that may make the area unsuitable for use by kangaroo rats. Abandonment and revegetation of the affected area may not be sufficient to allow recolonization by this species. 25-17

This section states that areas of shrub-steppe habitat that are lost would be replaced with an equivalent area of reestablished shrub-steppe habitat in the local area. Current practice in the project area is to replace lost habitat at a 3:1 ratio, not a 1:1 ratio. 25-18

In areas where shrub-steppe habitat is reestablished, we recommend that it be done in contiguous blocks, and, if possible, adjacent to larger existing areas of shrub-steppe habitat.

Page 3.6-10; last paragraph: Here, and in the table that follows on page 3.6-11, inadequate consideration was given to the effect a new tall structure has on breeding birds in shrub-steppe habitat. In addition to the permanent acres lost from the area occupied by the pad of the tower supports, there is likely additional acreage lost to area-sensitive breeding bird species, such as the sage sparrow. The final environmental statement should more thoroughly evaluate the direct and indirect effect of this additional hazard to local bird populations, and evaluate how impacts to local populations may affect regional bird populations. 25-19

Page 3.6-13; Operation and Maintenance, Generation Plant: Little information is presented on the potential for bird collisions with the four proposed exhaust towers. Thousands of waterfowl and other birds use the Columbia River and adjacent areas in the vicinity of the proposed project. For example, an aerial survey conducted in January, 2001, tallied 47,000 ducks and geese on the Columbia River just west of the project area. 25-20

Page 3.6-14; Operation and Maintenance, Transmission Line, and Associated Facilities: No site-specific project data is provided on the potential of bird collisions with power transmission lines and towers. Thousands of waterfowl use the Walla Walla River and associated wetlands in the vicinity of the proposed power line. For example, an aerial waterfowl survey conducted in February 2002, yielded 16,000 ducks and geese in the area. As such, the discussion of the potential effects of birds colliding with transmission lines is inadequate. The document reports that the construction of additional lines "creates a level of risk." However, there is little information presented to support such a conclusion. The final environmental statement should more thoroughly evaluate the direct and indirect effect of this additional hazard to local bird populations, and evaluate how impacts to local populations may affect regional bird populations. 25-21

A thorough analysis should employ a quantitative model projecting the mortality expected as a result of these new transmission lines across McNary NWR. The model should use, in part, baseline survey data of mortality from existing lines currently collected by Service personnel at Mid-Columbia NWR Complex. 25-22

Refuge staff conducted limited bird flight observations and carcass searches in the vicinity of the existing lines that cross the Walla Walla River. They conducted bird flight observations on eleven different days from December through February. Observations were made at or near dawn which is often a time of high bird movement. A total of 5,229 individual birds were counted flying near the power lines and structures during 12.7 hours of observation. Birds counted per hour of observation averaged 412. This represents a fairly high potential for bird collisions. Observations were not conducted near dusk, which is also a time of high bird movement. Most of the birds sighted were wintering waterfowl. Overall bird species diversity is not high at this time of the year in the project area. However, several other bird species, including bald eagles, were also sighted. Species diversity and numbers, and subsequent potential for collisions, would be expected to be greater during the fall and spring migrations.

Carcass searches were also conducted on these same days in December through February. Only two bird carcasses were found. However, a thorough carcass search program involves much more than the limited effort afforded by these observations. Carcasses can be difficult to find in vegetation, and carcass loss due to scavengers was not determined. In a more complete investigation, searcher efficiency trials should be run, and the rate of carcass loss to scavengers should be determined. Refuge staff were unable to account for these potential biases due to limited time and resources. 25-23

It appears that mitigation measures proposed involve the use of visual deterrents to cause birds to avoid the power lines and structures. These mitigation measures may not be adequate. Fog is common in the project area during the winter. In addition, many fall and spring migrants fly at night. We recommend that BPA commit to funding a 2-year post-construction survey of collision mortality as partial mitigation for bird collision impacts, and be prepared to address the results of the survey through a program of adaptive management.

Page 3.6-15; Alternative Transmission Structure and Longer Span Design: The impacts of this alternative are not adequately displayed in this section. There is no discussion of the effects the proposed taller transmission structures and longer transmission line spans would have on migratory birds. The possibility of increased collision risk should be addressed in the final environmental statement. 25-24

Section 3.11; Visual Resources: The visual simulations of the proposed generation plant do not provide an accurate representation of the size and scale of the facility. It is unlikely that a row of poplar trees could screen the view of four 175-foot tall exhaust stacks. Simulations that include these structures would provide the public a better understanding of the actual impact of these facilities. 25-25

Section 3.17; Cumulative Impacts: This section should be expanded in the final environmental statement to consider the cumulative effects of habitat loss from the proposed project and the multiple transmission line and energy projects currently in place and or being developed in the project area. Similarly, a projection of bird strike mortality resulting from the increased mileage 25-26

of transmission lines from all G-9 projects would be appropriate, as would an adaptive management program that addresses unanticipated levels of cumulative impacts from increasing the number of bird collision hazards being constructed. 25-26 contd

Page 3.17-27; Cumulative Impacts, Wildlife and Vegetation Impacts: The potential cumulative impacts to migratory birds from collisions with transmission lines, towers, and exhaust stacks are addressed inadequately. Thousands of migratory birds are known to use the project area during the spring and fall migrations, and during the winter period. Many structures that pose collision threats to migratory birds have already been erected in the area, and others are proposed. For example, Florida Power and Light recently completed the first phase of its Stateline Wind Energy Project that includes 399 wind turbines. These turbines are on the ridge to the south and east of the proposed transmission line. Florida Power is proposing to erect 103 more turbines soon. The final environmental statement should explain how these 502 wind turbines, when combined with the impacts from the proposed Wallula Power Project and transmission lines, as well as all other past, present, and reasonably foreseeable future projects, would affect the level of bird mortality from collisions. 25-27

P. A-11; Wetlands and Vegetation, Mitigation Measures: Section 6, beginning "Shrub-steppe habitat that is..." Please add to the end of the paragraph the following language: "...site in the area, determined through consultation with the Washington State Department of Fish and Wildlife and/or the FWS." 25-28

We believe it is also appropriate for BPA to commit to replanting with native vegetation at sites disturbed by T-Line construction (that is, put an 'X' under Bonneville T-Line column). 25-29

P. A-13; Wildlife, Construction Timing and Construction Avoidance Areas: In reference to paragraphs 3 and 4, we believe it is also appropriate for BPA to commit to providing the same mitigation for burrowing owls and occupied raptor nests afforded for pipelines and Bonneville T-line as is proposed for the power plant (Add 'X's to Pipelines and Bonneville T-Line columns). 25-30

P. A-14; Wildlife, Mitigation, Prevention of Bird Strikes: In paragraph 2, the draft document proposes the construction of flat configuration towers as a means to reduce the risk of bird collisions at McNary NWR. It seems that this risk reduction measure would be appropriate for many other parts, if not all, of the proposed transmission line corridor as well. 25-31

In paragraph 3, the draft document should describe the interval in which bird diverters would be placed, and reference appropriate protocols for diverter placement to enable the reader to assess the effectiveness of this proposed mitigation measure. 25-32

We also recommend that BPA commit to collision mortality studies for a minimum of two years post-construction at McNary NWR and adjacent to McNary NWR at Hat Rock Substation, or other suitable sites. This kind of study would help answer questions regarding the magnitude of bird collision mortality along all other BPA proposed lines. In addition, we recommend that BPA be prepared to address the results of the studies with an adaptive management program for reducing bird collision mortality. 25-33

Appendix B: A table with information indicating the months, dates, and number of days that wildlife surveys were completed should be included in the final environmental assessment. 25-34

SUMMARY COMMENTS

The Department appreciates the opportunity to provide comments on the draft environmental impact statement for the Wallula Power Project and the Wallula-McNary Transmission Line Project. We recommend that the final environmental statement include all direct, indirect, and cumulative impacts to fish and wildlife and their habitats, cultural resources, and McNary NWR lands resulting from construction, operation, and maintenance of the proposed project. We encourage USDOE and BPA to continue consultation and coordination with refuge staff regarding means and measures to ameliorate the project's effects on fish and wildlife and other environmental values. Consultation with the Service pursuant to section 7 of the Endangered Species Act should begin as soon as possible. Questions or concerns regarding these comments or requests for additional information regarding potential project effects on fish and wildlife resources and refuge lands should be directed to Mr. Mark Miller, Project Leader, U.S. Fish and Wildlife Service, Eastern Washington Fish and Wildlife Office, P.O. Box 848, Ephrata, Washington 98823 (509-754-8580), and/or Mr. Gary A. Hagedorn, Mid Columbia River NWR Complex, U.S. Fish and Wildlife Service, 2805 Saint Andrews Loop, Pasco, WA 99301-2527 (509-545-8588), respectively. 25-35

Sincerely,

Preston A. Sleeger
Regional Environmental Officer

Responses to Comment Submission 25,
Letter from Preston A. Sleeger, U.S. Department of the Interior,
Office of Environmental Policy and Compliance

25-1. The biological assessment for this project addresses the significance of impacts to threatened, endangered, or sensitive species (see Appendix D of this Final EIS). The transmission line project and power project are not expected to result in significant impacts to wildlife and fish. The factors that affect the population of animals include availability of nesting and feeding habitat, water, weather, visual or audible disturbance, and hazards. The project would result in little permanent loss of habitat and insignificant health impacts to air and water. The hazard presented by the transmission line would be largely ameliorated by the identified mitigation measures.

25-2. Specific effects on the Wallula Habitat Unit were described on the following pages of the Draft EIS:

— water, page 3.3-8;
— wildlife, pages 3.6-10 through 12 and pages 3.6-14 and 15;
— fisheries, page 3.7-9;
— recreation, pages 3.10-10, 14, 22, 25, and 26;
— visual, pages 3.11-8, 16, 22, and Figure 3.11-13;
— cultural resources, pages 3.14-9 through 11; and
— transportation, pages 3.15-12 and 21.

In addition, the descriptions of general impacts of construction and operation of transmission lines on air quality, soils, water quality, vegetation, noise, human health, and cumulative effects in their respective sections can be applied to the area affected by the transmission line traversing the Wallula Habitat Unit. The document would become quite lengthy if all the effects were described for each individual landowner. Instead, the EIS groups impact discussions by resource impacted.

The relationship between McNary National Wildlife Refuge and Wallula Habitat Unit was described in Table 3.10-1 on page 3.10-22 and in Table 3.10-2 on pages 3.10-25 and 26.

25-3. Informal consultation has been initiated and a biological assessment submitted to the U.S. Fish and Wildlife Service (see Appendix D of this Final EIS). A "no effect" determination for listed fish resulted in the biological assessment not requiring National Marine Fisheries Service concurrence.

25-4. A biological assessment has been prepared by Entrix, Inc., following guidance and supervision from Bonneville (see Appendix D). Bonneville has reviewed the biological assessment and is participating in consultation to ensure the requirements of Section 7 compliance are attained. Bonneville contributed funding to the U.S. Fish and Wildlife Service specifically to aid in evaluating the impacts of this and other transmission line projects and allow for consultation and completion of Section 7 requirements.

25-5. The adjective "nominal" in this case was not used to describe or quantify the environmental impacts of the project. Nominal refers to the expected power output of the plant, rather than the design capacity of the plant, often referred to as "nameplate" rating.

25-6. Trees and shrubs that hinder safe operation during construction activities or safe operation of the transmission line would be removed. Some trees could be removed near the towers that would be located adjacent to the Walla Walla River for construction access. Bonneville does not anticipate that trees would be cleared along the river banks.

25-7. Information about the evaporation ponds has been added to Section 3.3 in Chapter 3 of this Final EIS. Two 11-acre evaporation ponds would be used to evaporate the concentrated

brine produced by the evaporator (brine concentrator). Each pond would be lined to prevent infiltration of the water into the ground. The liner would consist of a 2-foot-thick soil layer, over a 60-mil HDPE liner, over a 2-foot-thick clay, bentonite, or geomembrane layer. Underlying this would be a leakage detection and collection system consisting of filter sand with piping and sumps to collect and monitor any leakage through the overlying liner system. Below the filter sand would be a 30-mil liner to prevent any leakage from infiltrating into the underlying soils. This leakage detection system would be monitored by facility personnel to ensure the integrity of the evaporation pond liners. Concentrated brine from the evaporators would be transferred directly to the evaporation ponds. The sludge collected in the ponds would be periodically removed and disposed in a licensed landfill.

25-8. All reasonably foreseeable future actions are being evaluated for the design of the McNary Substation expansion. The design for the entry into the substation will take into account the John Day-McNary line and other projects that are currently known, in order to limit the need to reconfigure later. This is a difficult task with several power generation projects proposed in the area and some of them being delayed or withdrawn.

25-9. Text from the Cooperative Agreement is included in Section 3.10 in Chapter 3 of this Final EIS.

25-10. Before commencing any construction on property under the jurisdiction of the Corps, Bonneville will submit to the Corps a permit application including copies of the layout, plans, and designs, and a statement regarding the primary purpose of the intended use for the proposed facilities. Construction activities would not start until the Corps has furnished a permit or authorization to Bonneville approving the construction and use of the property.

25-11. The Corps has the authority to grant land easements even if the affected property was originally set aside to mitigate for an earlier project.

25-12. The project location map has been updated to show the off-site parcel that would be used to offset particulate emissions (the Wake property). See Figure 1-1 in Chapter 1 of this Final EIS. The offset area consists of one large parcel southwest of the plant on the west side of the Columbia River.

25-13. A discussion of the potential impacts resulting from the change in pumping of the Boise Cascade fiber farm wells from the current seasonal fluctuations in withdrawal rates to a relatively steady withdrawal rate was included in Section 3.3.2.2 of the Draft EIS under the subheading "Effects on the Gravel Aquifer." Minor clarifications to this section are shown in Chapter 3 of this Final EIS. In summary, the total amount of pumping would be reduced so less water would be used overall. During the irrigation season the amount of water used would be less, resulting in less drawdown of the aquifer during the period when it is most heavily used. During the remainder of the year the use would be increased somewhat, but this would not likely affect other water users because of the low overall demand from the shallow aquifer during that time.

25-14. Construction impacts to wetlands would be avoided. The applicant is treating all wetlands along the western edge of the project site as jurisdictional. The wetlands have been delineated with buffer widths set in compliance with the Department of Ecology's guidelines as well as the Walla Walla County Critical Areas regulations. The Corps regulates fill and discharge into wetlands. No fill will be placed in these wetlands and no discharge to surface waters will occur from this project.

25-15. The applicant has provided funding to a private third party to restore and enhance approximately 145 acres of riparian habitat along the Walla Walla River in cooperation with the Department of Ecology.

Section 3.4.5 has been updated to locate the proposed planting of 145 acres of riparian habitat with native trees along the lower reach of the Walla Walla River (see Chapter 3, Section 3.4 of this Final EIS). The details regarding the riparian enhancement would be

contained in the agreement between Ecology and the property owners.

25-16. Thank you for your comment.

25-17. Mitigation has been changed to reflect this concern.

25-18. Concerning shrub-steppe habitat replacement, the jurisdictional authorities would determine the required ratios, if any. The Settlement Agreement between the applicant and WDFW addresses these issues.

25-19. Please refer to the mitigation measures in Appendix A under "Revegetation/Habitat Restoration." See also response to comments 25-23 and 25-33.

There are likely to be effects on the sage sparrow. Research indicates that it usually does not respond well to habitat fragmentation. However, additional, more comprehensive research is needed to fully understand the effects of habitat fragmentation on area-sensitive birds. The sage sparrow is the most common bird mentioned in the research, with the sage thrasher, loggerhead shrike, grasshopper sparrow, and Brewer's sparrow also showing up to a lesser extent in a few studies.

It would be difficult to quantify how much area around a tower might be affected.

There are many effects of fragmentation on breeding populations of area-sensitive birds. Most notably, research suggests that some birds are area-limited and nest only in relatively large patches of shrub-steppe habitat. In addition, fragmented habitat can lead to edge effects, increased predation and parasitism, and reduced demographic success (Johnson and Igl 2001, Haegen et al. 1999). We could not find any documentation that the birds will avoid these structures.

25-20. Please see response to comment 23-16.

25-21. Please see responses to comments 20-4, 25-1, 25-23.

25-22. Creating a quantitative model from survey data collected on the existing line will not likely result in an accurate estimate of mortality. Mortality from collisions is site-specific based upon many factors. Bird populations at any particular site vary from year to year and season to season. Mortality estimates have been made in previous studies. A conservative estimate of 0.3% of the total flights crossing a line can give us an estimate of expected mortality.

The existing transmission line is a single conductor configuration with no groundwire. This configuration will be upgraded to a configuration of three subconductors in a bundle during fall 2002. Two other site-specific studies of transmission line collisions (James and Haak 1979, Meyer 1978) observed no collisions with conductors when they were bundled in groups of three subconductors. Almost 80% of the collisions observed were with groundwires. The 21% of collisions that were observed with conductors were with conductors in bundles of two subconductors or a single subconductor. The new configuration of the existing line may make it more visible to birds using the area than the current situation.

25-23. Complete studies on bird mortality due to collisions with transmission lines have been conducted in the past. A study on seven wetland sites in three locations in Washington and Oregon examined daylight and nighttime bird movements and conducted systematic dead bird searches (Meyer 1978). This study concluded that the "overall biological and ecological impact of bird collisions was of little significance." This is not to say there will be no impacts. Some mortality does occur, as your fieldwork has uncovered. In Meyer's study, all observed collisions on 500-kV lines were impacts on the groundwire above the conductors. There were no bird strikes observed with the conductors themselves. This would suggest that placing the bird diverter devices on the groundwire would result in a significant drop in collisions. This has been demonstrated in studies with bird diverter devices (APLIC 1994). A comparison study of a similar line before and after a groundwire was removed indicated that mortality could be reduced 50 to 80% (Beaulaurier 1981).

Flight intensity on a 500-kV line of Delta configuration (as opposed to the flat configuration at Wallula) at Lower Crab Creek in Meyer's study was approximately 530 birds crossing the line between one-half hour before sunrise and just after sunrise. This is a comparable or higher number of birds than the intensity you have observed in your area. Collision percentages vary by many factors and numbers ranging from 0.01% to 0.4% of total bird crossings have been used. Bird flight during the night and during fog is a relatively low percentage of overall flight intensity. Very little information about bird strikes during fog is available. Bonneville is not willing to commit to a two-year study at this time. Please see also response to comment 25-33.

25-24. There would be an increased risk of bird collisions with the taller transmission structures, particularly with the inclusion of a groundwire on the new line. A higher level of mortality would be likely, although the number is difficult to estimate without knowing the species, number, and flight patterns of migratory birds through this area. The location of the segment where taller towers are being considered is predominantly dry farmland and shrub-steppe habitat well away from riparian corridors, which are common paths for migratory birds. Overall bird use in studies of similar areas for potential wind generation farms was relatively low (Erickson et al. 2002).

25-25. The visual simulations do include the 175-foot exhaust stacks and depict the fact that they would not be completely screened from distant views (text in Section 3.11.3.1 indicates that the top one-third of the stacks would be visible). Please see Section 3.11 in Chapter 3 of this Final EIS for text updates and newly created visual simulations of the proposed transmission line.

25-26. Please see response to comment 25-1. We would estimate bird strike mortality at a conservative 0.3% of the local bird population. Approximately 120 miles of new transmission line in the G-9 projects being considered (not including Starbuck) are paralleling or replacing existing transmission towers and conductors. Birds using these local areas where there are existing lines already experience a transmission line hazard. The addition of another line is not expected to appreciably change the existing mortality rate from collisions and therefore would not create a large increase in the cumulative impact. There are, however, approximately 172 miles of new transmission line that would be in a new right-of-way corridor or create a change to the height of existing lines. These lines are likely to cause some unavoidable mortality to birds due to collisions. All 292 miles would have an impact on habitat from clearing vegetation for towers and line pulling equipment.

25-27. Based on research currently underway, the likelihood is low that additional wind turbines will significantly affect local bird populations. Many improvements have been made in the siting, design, and construction of wind turbines that have greatly reduced avian mortality (Erickson et al. 2002). In addition, Bonneville is currently helping to develop improved technology for monitoring bird collisions in cooperation with the Edison Electric Institute. Please also see response to comment 23-16 and 25-33.

25-28. See Appendix A for updated text under Wetlands and Vegetation.

25-29. Efforts will be made to use native species in seed mixtures. At times, introduced species may be considered since they are better suited for erosion control or they are competitive against noxious weeds.

25-30. Mitigation has been amended. Please see Wildlife mitigation under Construction Timing and Construction Avoidance Areas in Appendix A.

25-31. The proposed flat configuration towers would be located adjacent to an existing segment of the Lower Monumental-McNary transmission line that has flat configuration towers. The existing Lower Monumental-McNary transmission line has delta configuration towers for most of the rest of its length. Delta configuration towers carry the conductors at a slightly different height and formation than flat configuration towers. It would be best to match the new towers and conductors as closely as possible to the height of the existing line to lessen the risk of bird collisions. Therefore, delta configuration towers are a better choice for the majority of the new transmission line.

25-32. Bird diverters would be spaced at the optimal spacing prescribed by the manufacturer or per Bonneville's standard design which is dependent on span length. There are many brands of bird diverters available and it is not known at this time the brand that would actually be purchased and installed. One potential source is the Dulmison Bird Diverter, which recommends optimal spacing of 5 meters (approximately 15 feet) apart to maximize the reduction in bird collisions.

25-33. Bonneville is currently helping to develop improved technology for monitoring bird collisions in cooperation with the Edison Electric Institute. Bonneville is providing funding and expertise in a study to test a bird strike indicator, a device clipped onto overhead groundwires to monitor and store electronic information about impacts with the wire. Some of these devices will be tested this summer in areas of known bird strikes that have been previously studied in the Audubon Wildlife Refuge in North Dakota. If they prove to be a useful tool, these devices will be placed for monitoring in the areas identified as having the highest need. The McNary Wildlife Refuge could be considered as a site in the future. Bonneville is not willing to commit to a two-year study of bird strike mortality at McNary Wildlife Refuge at this time.

25-34. The requested information about wildlife surveys is provided in Appendix B of this Final EIS.

25-35. The Draft EIS and response to comments in this Final EIS make a reasonable attempt to reveal all direct, indirect, and cumulative impacts in the project area.